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File 1980-0026
Date 4/23/01

Project Name: Independent Avenue Commercial Park-Prelim. Plan

Present	Scanned	
		A few items are denoted with an asterisk (*), which means they are to be scanned for permanent record on the ISYS retrieval system. In some instances, not all entries designated to be scanned are present in the file. There are also documents specific to certain files, not found on the standard list. For this reason, a checklist has been included. **Remaining items, (not selected for scanning), will be marked present on the checklist. This index can serve as a quick guide for the contents of each file.** **Files denoted with (**) are to be located using the ISYS Query System. Planning Clearance will need to be typed in full, as well as other entries such as Ordinances, Resolutions, Board of Appeals, and etc.**
X	X	***Summary Sheet – Table of Contents**
		Application form
		Receipts for fees paid for anything
		***Submittal checklist**
		***General project report**
		Reduced copy of final plans or drawings
		Reduction of assessor's map
		Evidence of title, deeds
X	X	***Mailing list**
		Public notice cards
		Record of certified mail
		Legal description
		Appraisal of raw land
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		***Final reports for drainage and soils (geotechnical reports)**
		Other bound or nonbound reports
		Traffic studies
		Individual review comments from agencies
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		***City Council staff report and exhibits**
		***Summary sheet of final conditions**
		***Letters and correspondence dated after the date of final approval (pertaining to change in conditions or expiration date)**

DOCUMENTS SPECIFIC TO THIS DEVELOPMENT FILE:

X	X	Action Sheet	X	X	Fire Protection Agreement – 5/6/80
X		Review Sheets	X		Grading Plan
X	X	Review Sheet Summary	X		Utility Composite
X		Preliminary Plan Application			
X		Subdivision Summary Form			
X	X	Letter from James Patterson to J & J Enterprises re: water and sewer services-3/24/80			
X	X	Planning Commission Minutes – 26-80-**			
X		Letter form Sue Drissel to Robert Wilson re: approval of petition and schedule for CC-5/1/80			
X	X	Letter from Douglas Walck to J & J enterprises, Inc. re: frontage road-4/16/80			
X		Title Ins. Commitment			
X		Legal Description			
X	X	Subsurface Soils Investigation – 2/13/80			

Acres 5.3 | File # 26-80

Units | ACTION SHEET | Zone C-2

Density | Tax Area Code

Activity Independant Ave Commercial Park

Phase Preliminary - Plat | Date Neighbors Notified 4/18/80

Date Submitted 1 April 80 | Date CIC/MCC Legal Ad

Date Mailed Out | PC Hearing Date 29 April 80

Review Agencies | 10 day Review Period - Return By

Send		Send	
___	COUNTY ROAD DEPARTMENT	✓	FIRE city
___	COUNTY HEALTH DEPARTMENT	✓	IRRIGATION G.U.
___	COUNTY SURVEYOR	✓	DRAINAGE G.J.
___	COMTRONICS	✓	WATER (UTE, CLIFTON)
___	GRAND VALLEY RURAL POWER	___	SEWER
✓	MOUNTAIN BELL (2 REVIEW SHEETS)	✓	CITY ENGINEER/~~UTILITIES~~ TRANSP. ENGINEER
✓	PUBLIC SERVICE	___	MACK, LOMA, MESA, COLLBRAN
___	SOIL CONSERVATION SERVICE	___	FRUITA, PALISADE
___	SCHOOL DISTRICT 51	✓	Fish & Game
✓	STATE HIGHWAY	✓	Jim Patterson
___	STATE GEOLOGICAL	✓	ENERGY office
___	STATE HEALTH - RADIOLOGICAL	✓	P.D. - Ed Vander Took
___	TRANSAMERICA TITLE	✓	Tec. Review

Board	Date	Comments
GJPC	4/29/80	rec app subject to staff/review comments
CIC	5/21/80	APPROVED (consent agenda) subj. to conditions of GJPC

Common Location S.E. of intersection of Hwy 6&50 & Independant Ave

Staff Comments

LEGAL OK

Original Documents

___ Imp. Agreement $___ Appraisal x .05 = $___ Open Space; ___

___ Imp. Guarantee Receipt #___ Check # ___

___ Covenants ___ Open Space Dedication

___ Power of Attorney

___ Dev. Schedule

REVIEW SHEET SUMMARY

FILE# 26-80

ITEM INDEPENDANT AVE. COMMERCIAL PARK - PRELIMINARY DATE SENT TO REVIEW DEPT. 4-4-80

DATE DUE 4-16-80

PETITIONER Robert Wilson

LOCATION S.E. of intersection of Hwy 6 & 50 and Independant Ave.

DATE REC.	AGENCY	COMMENTS
4-7-80	MAPPING	No objection
4-10-80	CITY UTILITIES	Sewage collection system including pump station is to be privately owned and maintained. Connection to city system allowed with payment of plant investment fee for each structure served. When Independent Ave. sewer is constructed (est. 1981), then at option of owners the pump station can be taken out of service and gravity sewer service obtained in Independent Ave. by paying tap fee (less plant investment fees) for each structure served. Fire protection water lines and fire hydrants to be built to city specifications and maintained by city. Domestic water to be provided by Ute District.
4-11-80	CITY FIRE	Water for fire protection for this development is most likely inadequate as it is being supplied off of a dead end 2" Ute line. For this type of development it is reccomended that a minimum 8" looped line be used. Seven (7) hydrants will be required as follows: 1. N.E. corner Lot 2 2. 300' west of hydrant #1 3. 300' west of hydrant #2 4. 300' south and west along property line from hydrant #3 5. 300' south along east property line Lot #2 6. 150' south of north property line of Lot #2 in the 15' utility easement and at least 40' away from any structure (city water is close-if annexed to city) 7. located an equal distance between hydrant #5 and hydrant #6 We reccomend that just west of hydrant #3 that the 8" line be tied into the two inch linein Independent Ave. in order to provide some type of a looped system. Hydrants #5,6, & 7 should be on a minimum 8" looped line.
4-14-80	MOUNTAIN BELL	We have no additional easement requests or comments.
4-16-80	CITY ENGINEER	Any public sewer lines or waterlines (city system only) must have detailed construction plan review by me prior to construction. Power of attorney for full street improvements to Independent Avenue should be granted prior to recording plat. Apparently this is going to be annexed. Who will improve the extended frontage road? Colorado Division of Highways approval will need to be obtained for anything relating to the frontage road. I am not familiar with the dike situation at West Lake. Who might know about any failure potential of the dike? It seems to me this should be checked into by the petitioner's

engineer before valuable improvements are constructed on the site.

4-16-80 TRANS. ENG. The 90° parking stalls shown on the two N-S streets will present a hazard to through traffic.

4-16-80 UTE WATER
1. A Peak Demand-Data Sheet will be required for each individual unit in order to determine domestic service line and meter sizes before final approval.
2. If fire flow requirements are to be supplied by Ute Water, an extension will be necessary.
3. This extension would begin at the intersection of 25½ Rd. and Pinyon Ave., run South in 25½ Rd. to Independent Ave. then West to the indicated access easement between Lot #1 and Lot #2 (alternate route may be possible).
4. The extension would be CLASS 200, 8 inch AC pipe, approximately 2350 feet long with an estimated installed cost of $8.25 per foot ($19,387.50)
5. Participation in an existing extension would also be required and all costs would be borne by the developer, subject to rebate from subsequent extensions and/or connections for a 10 year period from the date of contract.
6. Extension policies, tap and connection fees in effect will apply.

4-17-80 FISH & GAME The Division of Wildlife has no objections to the proposed developments as presented in the attached documents.

4-18-80 PUBLIC SERVICE Electric: No Objections.
Gas: Developer should contact Public Service Co. as to meter locations, no determination can be made from preliminary plans as to the extension of Gas service. Utility composite is therefore inaccurate.

DESIGN & DEVELOPMENT PLANNER
No objection to plat.

STAFF RECOMMENDATION
Recommend approval of annexation
Recommend approval of preliminary plat with the following stipulations to be addressed at time of final submittal:
1. POA for full street improvements of Independent Avenue.
2. Contact Colorado Department of Highways re: frontage road improvenents.
3. Meet fireflow requirements as listed by City Fire.

NOTE: Review of this subdivision does not constitute review or approval of any development plans.

5-02-80 GJ DRAINAGE O.K.

4-29-80 GJPC - GRAHAM/RIDER PASSED 6-0 A MOTION TO RECOMMEND ACCEPTANCE OF THE PLAN FOR THE INDEPENDENT AVENUE COMMERCIAL PARK TO THE CITY COUNCIL, SUBJECT TO ALL THE STAFF COMMENTS AND RECOMMENDATIONS.

LIST OF PROPERTY OWNERS ABBUTTING TRIANGLE PARK

(as shown on the accompanying plat)

Dorothy Bauman
585 25 1/2 Road
Grand Junction, CO 81501

Gus Etal Halandres
c/o Pavlakis & Co
5670 E. Evans Avenue
Denver, CO 80222

Craig Associates
c/o Pavlakis & Co
5670 E. Evans Avenue
Denver, CO 80222

Trevinac Houston
930 Independent Avenue
Grand Junction, CO 81501

Gary L. & Sheila Robison
2541 Highway 6 & 50
Grand Junction, CO 81501

Fred & Roxi Ligrani
2526 River Road
Grand Junction, CO 81501

Lincoln DeVore
1000 West Fillmore St.
Colorado Springs, Colorado 80907
(303) 632-3593
Home Office

February 13, 1980

J & J Enterprises
P.O. Box 2966
Grand Junction, CO 81501

Re: SUBSURFACE SOILS INVESTIGATION

TRIANGLE PARK

GRAND JUNCTION, COLORADO

Gentlemen:

Transmitted herewith are the results of a subsurface soils investigation for the proposed Triange Park Commercial Development at Highway 6 and 50 and Independent Avenue, Grand Junction, Colorado.

Respectfully submitted,

LINCOLN-DeVORE TESTING LAB., INC.

Walter Vanderpool

By: Walter Vanderpool
Civil Engineer

Reviewed by: George D. Morris, P.E.

WV/jah
LDTL Job No. J-1149, 32406

ABSTRACT:

The contents of this report are a subsurface soils investigation and foundation recommendations for a proposed commercial development to be located West of Grand Junction, Colorado. At present, Lincoln-DeVore has not seen a set of construction drawings for any of the proposed structures to be built on this site.

After consideration of the investigation and testing program described herein, it is our recommendation that shallow foundation systems consisting of continuous foundations beneath load bearing walls and isolated spread footings beneath columns and other points of concentrated load be used to carry the weight of the proposed structures.

The engineering properties of the subsurface soils on this site were noted to vary at different locations throughout the site. For this reason, it is recommended that the open foundation excavations be inspected prior to the construction of forms and placement of concrete, in order to determine the proper design parameters at each particular building site. Preliminary design values of 1000 psf may be used until this is established by inspection.

Due to the proximity of the free water table to the ground surface, it is recommended that basements not be used in conjunction with structures placed on this site. The bottom of all foundations should be located a minimum of

two feet below the finished grade, or as dictated by the local building codes, for frost protection.

In order to reduce the possibility of differential movement beneath the structures, it is our recommendation that the foundation be well balanced and heavily reinforced.

Contact stress beneath the foundations should be balanced to within ± 300 psf at all points. Stem walls should be designed as grade beams capable of spanning 15 feet.

Adequate drainage must be provided at all times. Water should never be allowed to pond above the foundation materials. All floor slabs on grade should be free to act independently of the structural portions of the building.

More detailed recommendations can be found in the body of this report. All recommendations are subject to the limitations set forth herein.

GENERAL:

The purpose of this investigation was to determine the general suitability of the site for construction of a series of light to medium weight commercial structures. Characteristics of the individual soils encountered in the test borings were examined for use in designing foundations for these structures.

The site investigated is located on the western edge of Grand Junction, Colorado. The site is bounded on the southwest by Highway 6 & 50 and on the North by Independent Avenue. This location is in the southeast quarter of the southwest quarter of Section 10, Township 1 South, Range 1 West, of the Ute Principal Meridian. The site is approximately one half mile northeast of the present course of the Colorado River.

The topography of the site can generally be described as flat, being located on the floodplain of the Colorado River. The direction of the runoff will be controlled to an extent by Streets and buildings in the area, and, therefore, will be variable. In general, however, surface runoff will flow in a southwesterly direction, eventually entering the Colorado River. Surface drainage is fair; subsurface drainage is poor.

The soils on this site are alluvial in nature, having been deposited by action of the Colorado River in the past. Due to the nature of the deposition of this soil, it is highly stratified and somewhat unpredictable. The

characteristics of soils at various points throughout the site can be expected to vary somewhat from those encountered in the test borings of the subsurface exploration.

The soil profile consists of finer grained alluvial materials which have been deposited on the gravel and cobbles of the Colorado River terrace. This terrace is believed to lie directly on formational Mancos Shale. The Mancos Shale is characteristically a dark gray to black, soft shale with thin sandstone layers occuring at various elevations. No formational material was encountered in any of the five test borings. It is not expected that the formational material will affect the proposed foundation systems on this site.

BORINGS, LABORATORY TESTS AND RESULTS:

Five test borings were drilled at the site as shown on the Site Location Diagram. These test borings were placed in such a manner as to obtain a representative profile of the subsurface soils across the site. All borings were drilled with a power driven, continuous auger drill. Samples were taken with the standard split spoon sampler, with thin walled shelby tubes and by bulk methods.

The subsurface soil profile can be described broadly as alluvial material ranging from fine grained clayey silts to gravel and cobbles. Generally speaking, the fine grained materials are at the top of the subsurface profile, transitioning to coarser sands, gravel, and cobbles. This profile generally tends to become coarser with depth due to the nature of the deposition of the material. The subsurface profile is highly stratified. Generally, the subsurface soils on this site are in a low density condition.

The samples obtained during our field exploration program have been divided into four soil types. The first of these is a clayey silt which was encountered at the ground surface in Test Holes 1 and 5. The second soil type is a fine grained silty sand which was encountered at the surface or immediately below the clayey silt of Soil Type No. 1. Soil Type No. 3 is a poorly graded sand material which was encountered at 4 to 9 feet in Test Boring No. 4 and below 9 feet in Test Boring No. 5.

Soil Type No. 4 is a poorly graded silty gravel which was found below 9 feet in Test Boring No. 4 and from the surface to 7 feet in Test Boring No. 5.

More precise engineering characteristics of these four soil types are provided on the attached Summary Sheets. The following discussion will be general in nature.

Soil Type No. 1 classified as a lean silt of slight plasticity (ML) of fine grain size. This material is of low permeability, and was encountered in a low to very low density condition. Due to the low density condition, this material should exhibit very little tendency to expand upon addition of moisture. It will, however, exhibit considerable consolidation settlement due to its low density condition. For this reason, it is essential that the balancing and reinforcing recommendations given in this report be complied with. Since the density of this material is low and variable, it is recommended that specific bearing capacities and other design parameters be established for each site at the time of the open foundation excavation inspection. Soil Type No. 1 contains sulfates in detrimental quantities.

Soil Type No. 2 classified as a well graded silty sand of fine grain size (SW/SM). This material generally is non-plastic, of moderate permeability, and of low density. This soil was generally found in a stratified condition. It will have no tendency to expand upon the addition of moisture nor to true long term consolidation under load. It may exhibit

some settlement, however, if it is heavily loaded. Should building foundations rest on this material, it is recommended that bearing capacities and design parameters for each building site be established at the time of the open foundation excavation inspection. Soil Type No. 2 was not found to contain sulfates in detrimental quantities.

Soil Type No. 3 classified as a poorly graded gravelly sand (SP) of medium to coarse grain size. This material is of moderate permeability, and of low density. It will have no tendency to expand on addition of moisture nor to true long term consolidation under load. It may exhibit some settlement, however, if heavily loaded. If foundations are to be placed on this material, it is recommended that bearing capacities and other design parameters be verified at the time of the open foundation excavation inspection. This soil type was not found to contain sulfates in detrimental quantities.

Soil Type No. 4 classified as a poorly graded silty gravel of coarse grain size (GP/GM). This material was generally found in a stratified condition containing cobbles. This material is non-plastic, permeable, and encountered in a variable density condition. Soil Type No. 4 will have no tendency to expand upon addition of moisture, nor to true long term consolidation under load. It may exhibit some settlement, however, if it is heavily loaded. If foundations are to be placed on this material, it is recommended that bearing capacities and

and design parameters be established at the time of the open foundation excavation inspection. This soil was not found to contain sulfates in detrimental amounts.

Free water was encountered during our exploration program at depths ranging from 4 to 8 feet. Due to the proximity of the site to various irrigation ditches, ponds, and the Colorado River, it is felt that this water table is a permanent feature beneath the site. Some seasonal fluctuation in water table elevation can be expected. This water may create some problems in the installation of typical shallow foundations and will certainly create major difficulties in the installation of a basement foundation. For this reason, we would recommend that basements not be used in conjunction with the structures to be built on this site.

Because of the capillary rise, the soil zone within a few feet above that depth identified as free water during drilling will be quite wet. Some pumping and rutting may be encountered during the excavation process, particularly if the bottom of the foundations extend to near the free water elevation. This is a temporary, quick condition caused by vibration of excavating equipment on the site. If this should occur, it can be stopped by removal of the equipment and greater care exercised in the excavation process. In extreme cases, a layer of coarse cobble sized material could be introduced into the bottom of the excavation and worked into the soft clays. This cobble raft will tend to stabilize the bottom of the excavation, providing a firm base on which to work.

CONCLUSIONS AND RECOMMENDATIONS:

It is assumed that the buildings to be constructed in this site will be rigid frame, standard metal buildings and therefore foundation loads will be light to moderate in magnitude, except at column points. Lincoln-DeVore should be informed of any special loads or unusual design conditions so that changes in the recommendations may be made, if necessary. Based upon our analysis of the soil conditions and project characteristics previously outlined, the following recommendations are made.

Assuming that some amount of differential movement can be tolerated, it is our recommendation that shallow foundation systems consisting of continuous foundations beneath all bearing walls and isolated spread footings beneath columns and any other points of concentrated loads be used to carry the weight of the proposed buildings.

Because of the variation of engineering characteristics encountered across the site, specific design parameters can best be established after the completion of the excavation for foundation construction. It is recommended that each excavation be inspected and evaluated on an individual basis.

The majority of the surface soils on this site appear to be in a moist loose condition. Bearing capacity values for these materials will be low, on the order of

1000 psf. These can be used for preliminary design purposes. Because of the low density and high moisture content of these materials, very little expansion is anticipated and, therefore the minimum dead load pressure on the order of 400 psf need not be exceeded for design purposes. Again, it should be noted that the values given here are typical values for the surficial materials and because of their variability across the site, precise bearing values must be established by inspection of each site on an individual basis.

In order to lower the possibility of differential movement beneath the structure, it is our recommendation that the foundation be well balanced and heavily reinforced. The structures should be balanced so that the load on the soil is approximately the same around the entire building. The soil beneath continuous footings and isolated spread footings should be balanced to within $\pm$ 300 psf. The criteria for this balance will depend upon the nature of the structure. Single story, slab on grade structures should be balanced on the basis of dead load only. Multi-story structures should be balanced on the basis of dead load plus one-half the live load.

In order to make the foundation somewhat more rigid and to spread the loads more evenly around the building, it is recommended that all stem walls be designed to span 15 feet. Horizontal reinforcement should be placed continuously around the structure with no gaps or breaks in the reinforcing

steel unless they are specially designed. All beams should be reinforced at both the top and bottom. The majority of the reinforcement should be placed near the bottom of the beam.

If the foundation loads should be heavier than those assumed in this report, a drilled pier (or driven pile) and grade beam foundation system could also be used. Such piers (or piles) would essentially extend into the bedrock located at depth across the site. However, it is recognized that this would be an expensive foundation alternative, and therefore, further recommendations will not be given in this report. It is felt that the engineering characteristics of the near surface materials are such that design of a shallow foundation system will be feasible. More complete design and construction recommendations for a deep foundation system can easily be provided at a later date, upon request. For the remainder of this report, it is assumed that a shallow foundation alternative will be used to transfer the weight of this building.

Where floor slabs are to be placed on grade, they should be placed on a capillary break consisting of a coarse, free draining, granular material. This capillary break must be provided with a free draining outlet to the surface and should not be allowed to act as a water trap.

Additionally, a vapor barrier should be used in conjunction with all floor slabs placed on the site.

All floor slabs on grade should be constructed so as to act independently of columns and bearing walls. Additionally, concrete floor slabs on grade should be placed in sections no greater than 24 feet on a side. Deep construction or contraction joints should be placed at these lines to facilitate even breakage. This will help reduce unsightly cracks caused by differential movement.

Adequate drainage must be provided in the foundation area both during and after construction to prevent the ponding of water. The ground surface around the building should be graded so that surface water will be carried quickly away from the structure. Minimum gradient within 10 feet of the structure will depend upon surface landscaping. Bare or paved areas should have a minimum gradient of 2%, while landscaped areas should have a gradient of at least 5%. Roof drains should be carried across all backfilled areas and discharged well away from the structure.

To give the building extra lateral stability and to aid in the rapidity of runoff, all backfill around the structures should be compacted to at least 90% of the maximum Proctor dry density, ASTM D-698. The native soils encountered on this site could be used as the backfill material. Compaction should be carried out at approximately the Proctor optimum moisture content, plus or minus 2%.

Backfill should be compacted to required density by mechanical means. No water flooding techniques of any type should be used in the placement of fill on this site.

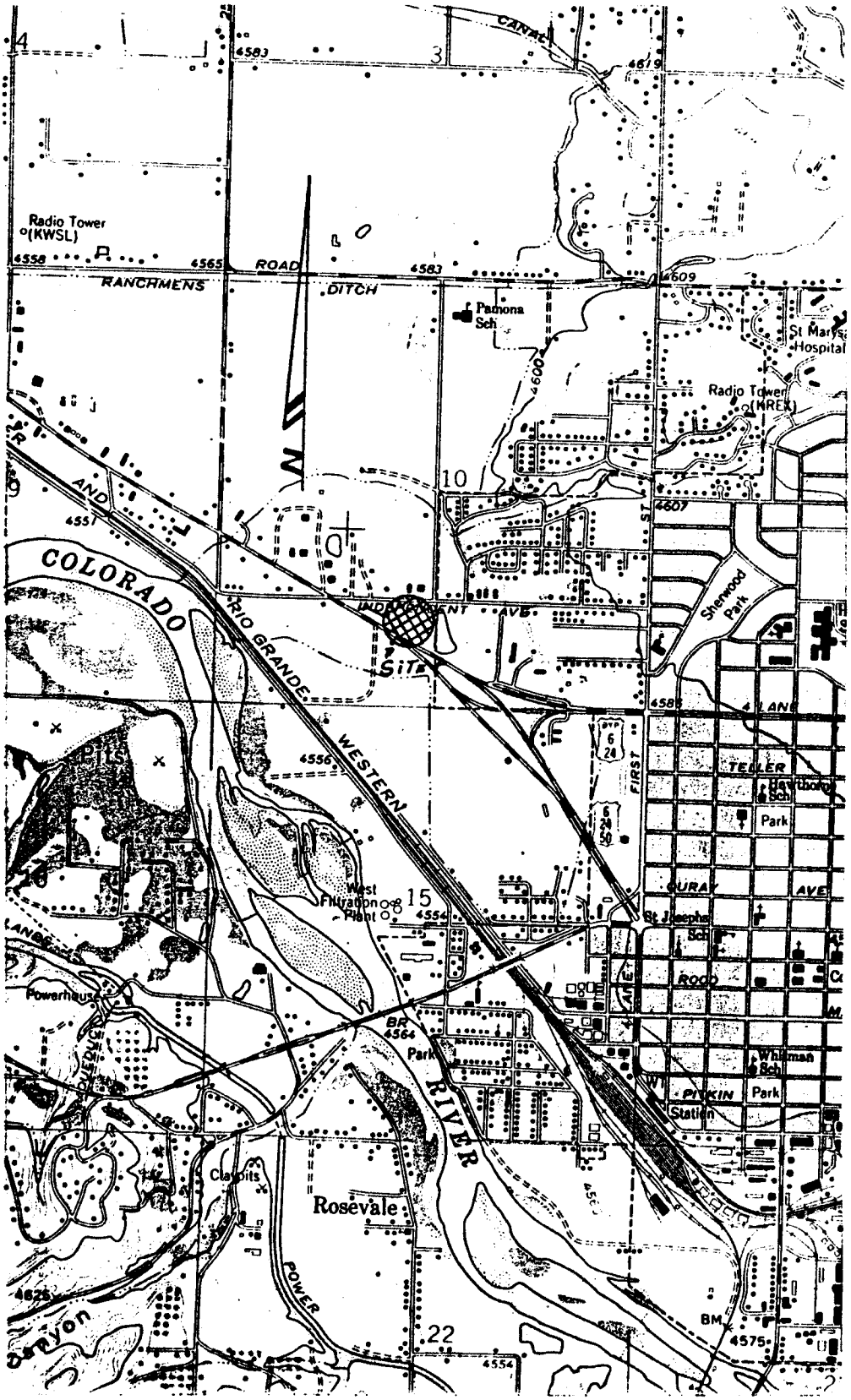
As stated previously in this report, the presence of the free water table will create problems both during construction and in the performance of basements placed on this site. For this reason, we recommend that basements not be used in conjunction with structures to be constructed on this site.

The fine grained silts (ML) encountered on the site were noted to contain sulfates in detrimental quantities. For this reason, we recommend that all concrete placed in contact with this material be made of Type II Cement. Under no circumstances should calcium chloride ever be added to a Type II Cement. In the event Type II Cement is difficult to obtain, a Type I Cement may be used provided the concrete is separated from the soils by a water resistant membrane.

Soils at this site are not capable of supporting significant horizontal loads. All foundation components must be designed such that only vertical loads are applied through the foundation components to the soils.

The horizontal thrust normally generated at the foundation line by rigid frame buildings should not be resisted by "hairpins" embedded into the floor slabs. This horizontal force should be resisted by either threaded tie rods or reinforcing bars extending from pier to opposite pier below the finished floor slab line. All fasteners should be either encased in concrete or covered with a heavy coat of bituminous paint to ensure long-term stability.

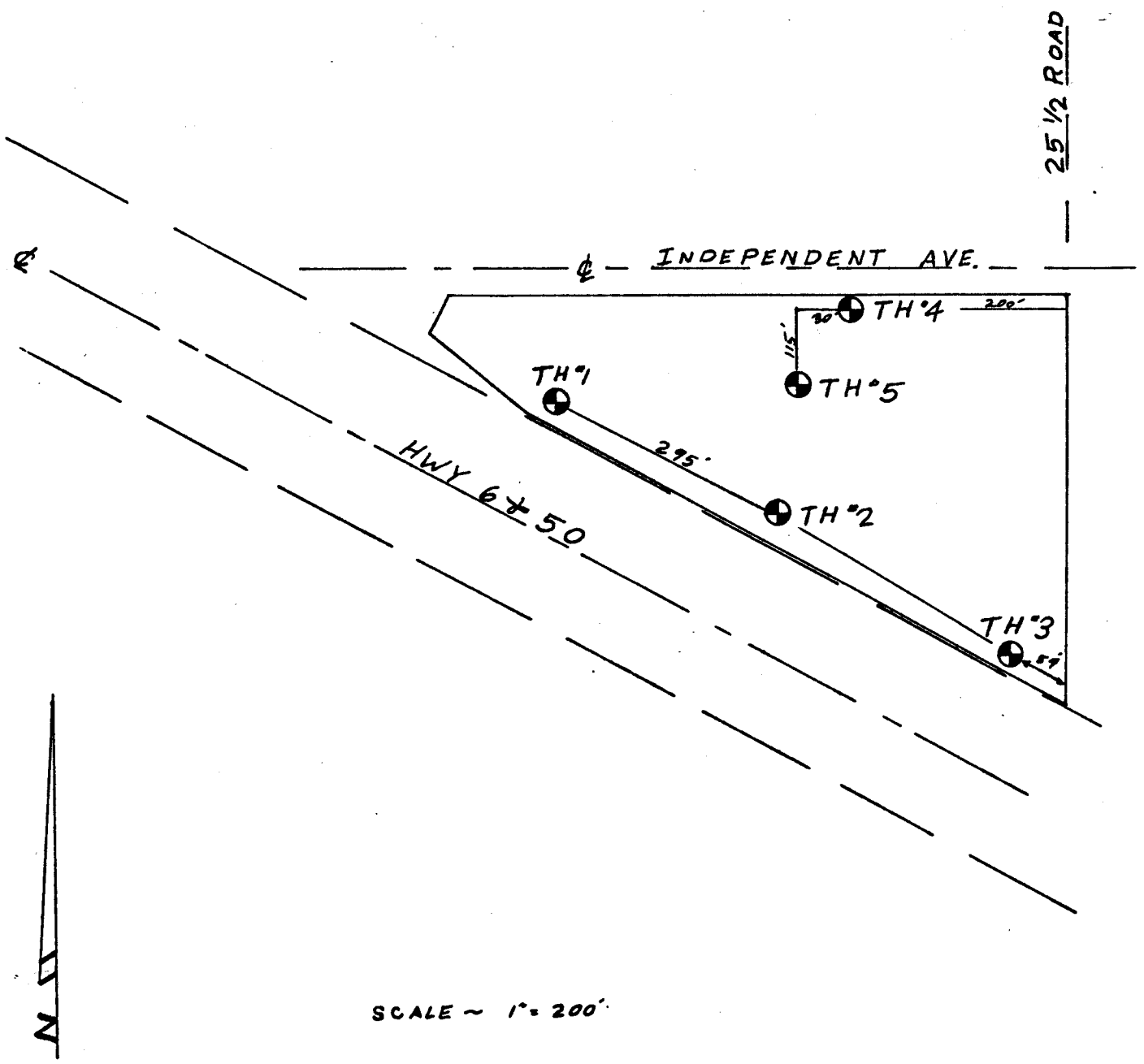
It is believed that all pertinent points concerning the subsurface soils on this site have been covered in this report. If soil types or conditions other than those outlined in this report are noted during the construction on this site, these should be reported to Lincoln-DeVore so that changes can be made in the recommendations, if necessary. If questions arise, or further information is required, please feel free to contact Lincoln-DeVore Laboratories.



SITE LOCATION DIAGRAM
HWY 6450, INDEPENDENT AVE. G.J., CO.

LINCOLN DeVORE ENGINEERS · GEOLOGISTS

COLORADO: COLORADO SPRINGS, PUEBLO, GLENWOOD SPRINGS, GRAND JUNCTION, MONTROSE,
WYOMING: ROCK SPRINGS



TEST BORING LOCATION DIAGRAM
HWY 6&50, INDEPENDENT AVE. G.J., Co.

LINCOLN DeVORE ENGINEERS · GEOLOGISTS

COLORADO: COLORADO SPRINGS, PUEBLO, GLENWOOD SPRINGS, GRAND JUNCTION, MONTROSE, WYOMING: ROCK SPRINGS

SOILS DESCRIPTIONS:

SYMBOL	USCS	DESCRIPTION
		Topsoil
		Man-made Fill
	GW	Well-graded Gravel
	GP	Poorly-graded Gravel
	GM	Silty Gravel
	GC	Clayey Gravel
	SW	Well-graded Sand
	SP	Poorly-graded Sand
	SM	Silty Sand
	SC	Clayey Sand
	ML	Low-plasticity Silt
	CL	Low-plasticity Clay
	OL	Low-plasticity Organic Silt and Clay
	MH	High-plasticity Silt
	CH	High-plasticity Clay
	OH	High-plasticity Organic Clay
	Pt	Peat
	GW/GM	Well-graded Gravel, Silty
	GW/GC	Well-graded Gravel, Clayey
	GP/GM	Poorly-graded Gravel, Silty
	GP/GC	Poorly-graded Gravel, Clayey
	GM/GC	Silty Gravel, Clayey
	GC/GM	Clayey Gravel, Silty
	SW/SM	Well-graded Sand, Silty
	SW/SC	Well-graded Sand, Clayey
	SP/SM	Poorly-graded Sand, Silty
	SP/SC	Poorly-graded Sand, Clayey
	SM/SC	Silty Sand, Clayey
	SC/SM	Clayey Sand, Silty
	CL/ML	Silty Clay

ROCK DESCRIPTIONS:

SYMBOL	DESCRIPTION
	SEDIMENTARY ROCKS
	CONGLOMERATE
	SANDSTONE
	SILTSTONE
	SHALE
x x x x x x	CLAYSTONE
	COAL
	LIMESTONE
	DOLOMITE
	MARLSTONE
	GYPSUM
	Other Sedimentary Rocks
	IGNEOUS ROCKS
	GRANITIC ROCKS
+ + + + + +	DIORITIC ROCKS
	GABBRO
	RHYOLITE
	ANDESITE
	BASALT
	TUFF & ASH FLOWS
	BRECCIA & Other Volcanics
	Other Igneous Rocks
	METAMORPHIC ROCKS
	GNEISS
	SCHIST
	PHYLLITE
	SLATE
	METAQUARTZITE
	MARBLE
	HORNFELS
	SERPENTINE
	Other Metamorphic Rocks

SYMBOLS & NOTES:

SYMBOL	DESCRIPTION
	9/12 Standard penetration drive Numbers indicate 9 blows to drive the spoon 12" into ground.
	ST 2-1/2" Shelby thin wall sample
	W_o Natural Moisture Content
	W_x Weathered Material
Free water	Free water table
	γ^o Natural dry density
	T.B. – Disturbed Bulk Sample
②	Soil type related to samples in report
15' W_x / Form.	Top of formation
	Test Boring Location
	Test Pit Location
	Seismic or Resistivity Station. Lineation indicates approx. length & orientation of spread (S = Seismic, R = Resistivity)

Standard Penetration Drives are made by driving a standard 1.4" split spoon sampler into the ground by dropping a 140 lb. weight 30". ASTM test des. D-1586.

Samples may be bulk, standard split spoon (both disturbed) or 2-1/2" I.D. thin wall ("undisturbed") Shelby tube samples. See log for type.

The boring logs show subsurface conditions at the dates and locations shown, and it is not warranted that they are representative of subsurface conditions at other locations and times.

LINCOLN DeVORE TESTING LABORATORY

COLORADO: Colorado Springs, Pueblo, Glenwood Springs, Montrose, Gunnison, Grand Junction. – WYO. – Rock Springs

EXPLANATION OF BOREHOLE LOGS AND LOCATION DIAGRAMS

TEST HOLE No.
TOP ELEVATION

TH #1

ML
CLAYEY SILT

FREE V WATER

SW-SM
SILTY SAND
FINE GRAINED

① 5/12 w_o = 20.9%
② 3/12 w_o = 34%
③

TH #2

SW-SM
FINE SILTY SAND
STRATIFIED

FREE V WATER

GP-GM
DENSE GRAVEL SILTY SANDY

① 7/12 w_o = 3.8%
② 5/12 w_o = 3.7%
③ 28/12 w_o = 7.3%
④

TH #3

GP-GM
SANDY GRAVEL
MOIST

④ 16/12 w_o = 2.5%
⑤

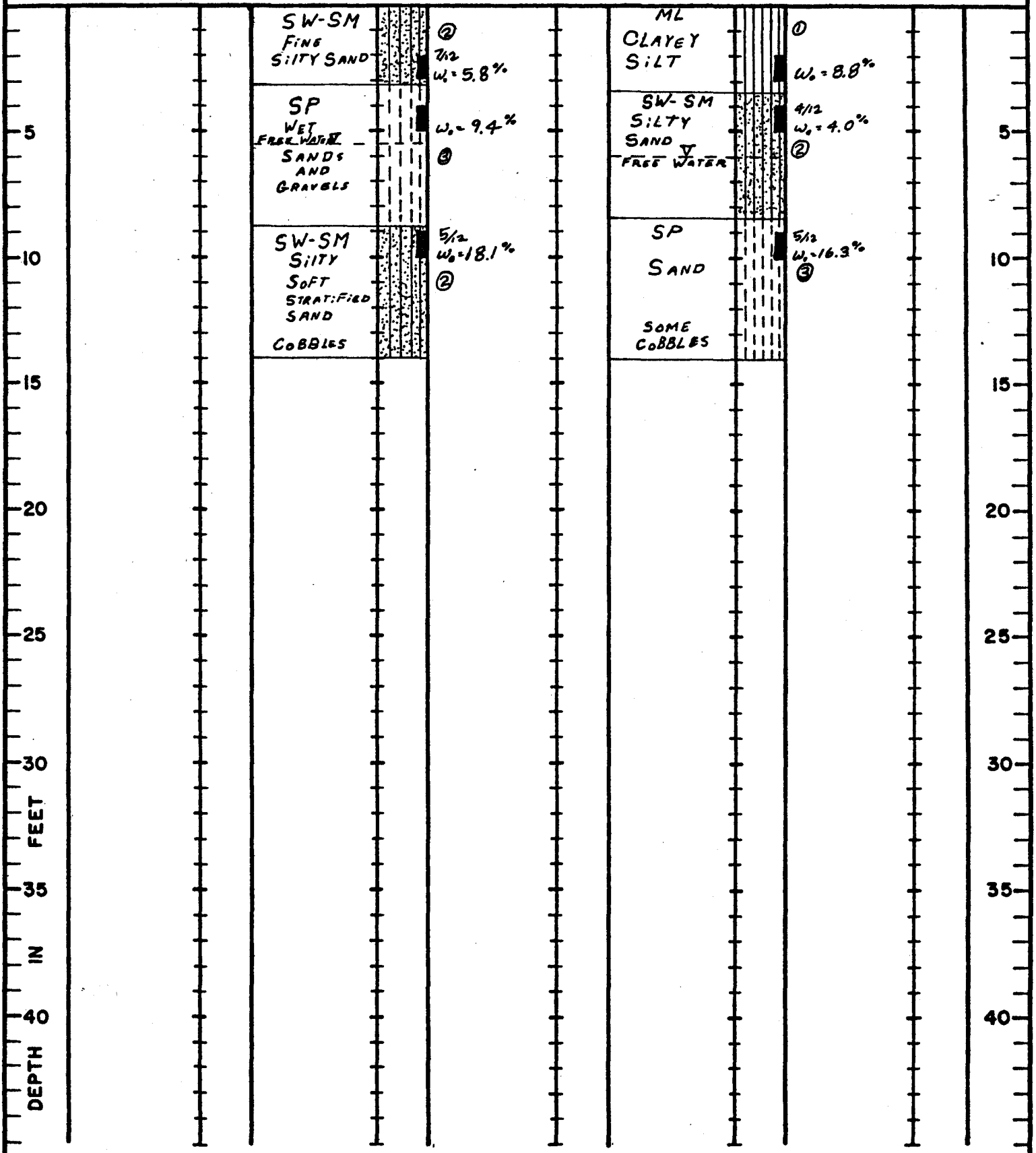
DEPTH IN FEET
5 10 15 20 25 30 35 40

DRILLING LOGS

LINCOLN DeVORE ENGINEERS · GEOLOGISTS

COLORADO: COLORADO SPRINGS, PUEBLO, GLENWOOD SPRINGS, GRAND JUNCTION, MONTROSE,
WYOMING: ROCK SPRINGS

TEST HOLE NO. TH #4 TH #5
TOP ELEVATION



DRILLING LOGS

LINCOLN DeVORE ENGINEERS · GEOLOGISTS

COLORADO: COLORADO SPRINGS, PUEBLO, GLENWOOD SPRINGS, GRAND JUNCTION, MONTROSE,
WYOMING: ROCK SPRINGS

SUMMARY SHEET

Soil Sample ML

Test No. J-1149

Location HWY 6 & 50, INDEPENDENT AVE.

Date 2-1-80

Boring No. 5 Depth 2½'

Sample No. 1

Test by T.D.H.

Natural Water Content (w)_____

Specific Gravity (Gs) 2.65

In Place Density (γ_o)_____ pcf

SIEVE ANALYSIS:

Sieve No.	% Passing
1 1/2"	
1"	
3/4"	
1/2"	
4	
10	
20	100
40	99.91
100	99.21
200	95.9

HYDROMETER ANALYSIS:

Grain size (mm)	%
0.068	47.96
0.023	28.0
0.006	14.0

Plastic Limit P.L. 27.6 %

Liquid Limit L. L. 28.9 %

Plasticity Index P.I. 1.3 %

Shrinkage Limit 23.3 %

Flow Index_____

Shrinkage Ratio_____ %

Volumetric Change_____ %

Lineal Shrinkage_____ %

MOISTURE DENSITY: ASTM METHOD

Optimum Moisture Content - w_o_____ %

Maximum Dry Density - γ_d_____ pcf

California Bearing Ratio (av)_____ %

Swell:_____ Days_____ %

Swell against_____ psf Wo gain_____ %

BEARING:

Housel Penetrometer (av) 1000 psf

Unconfined Compression (qu)_____ psf

Plate Bearing:_____ psf

Inches Settlement_____

Consolidation % under psf

PERMEABILITY:

K (at 20°C)_____

Void Ratio_____

Sulfates 2000 ppm.

SOIL ANALYSIS

LINCOLN-DeVORE TESTING LABORATORY
COLORADO SPRINGS, COLORADO

LDV-09

Soil Sample SW-SM

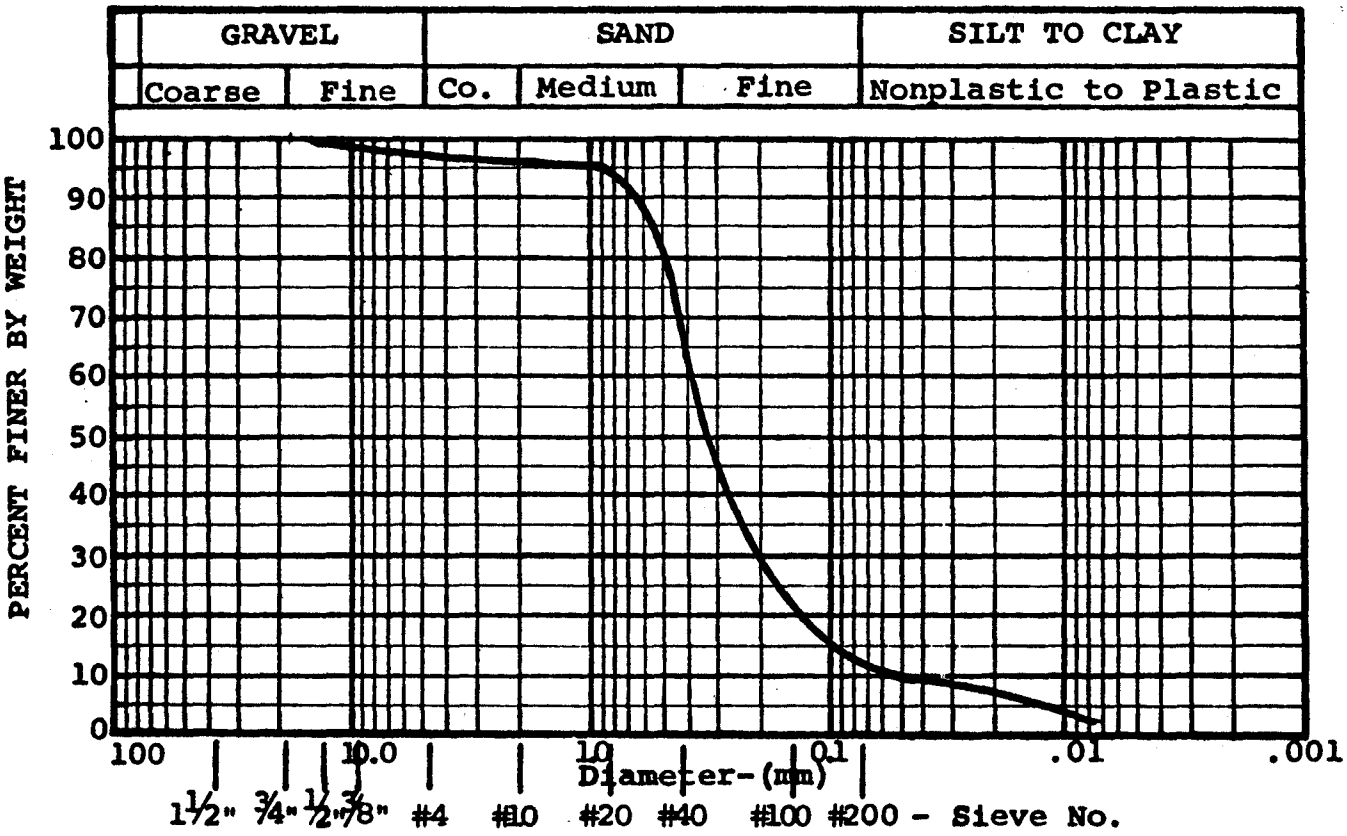
Test No. J1149

Project HWY 6 & 50, INDEPENDENT AVE.

Date 1-30-80

Sample Location T.H.-#1 @ 2½'

Test by T.D.H.



Sample No. 2

Specific Gravity 2.65

Moisture Content 20.9 %

Effective Size 0.057

Cu 7.0

Cc 1.8

Fineness Modulus

L.L. % P.I. NP %

BEARING 1200 psf

Sieve Size	% Passing
1 1/2"	100
1"	100
3/4"	100
1/2"	98.8
3/8"	98.5
4	97.0
10	95.7
20	93.7
40	68.5
100	21.2
200	11.7
.075	9.6
.024	8.2
.0057	1.4
Sulfates	250 ppm

GRAIN SIZE ANALYSIS

LINCOLN-DeVORE TESTING LABORATORY
COLORADO SPRINGS, COLORADO

Soil Sample SP

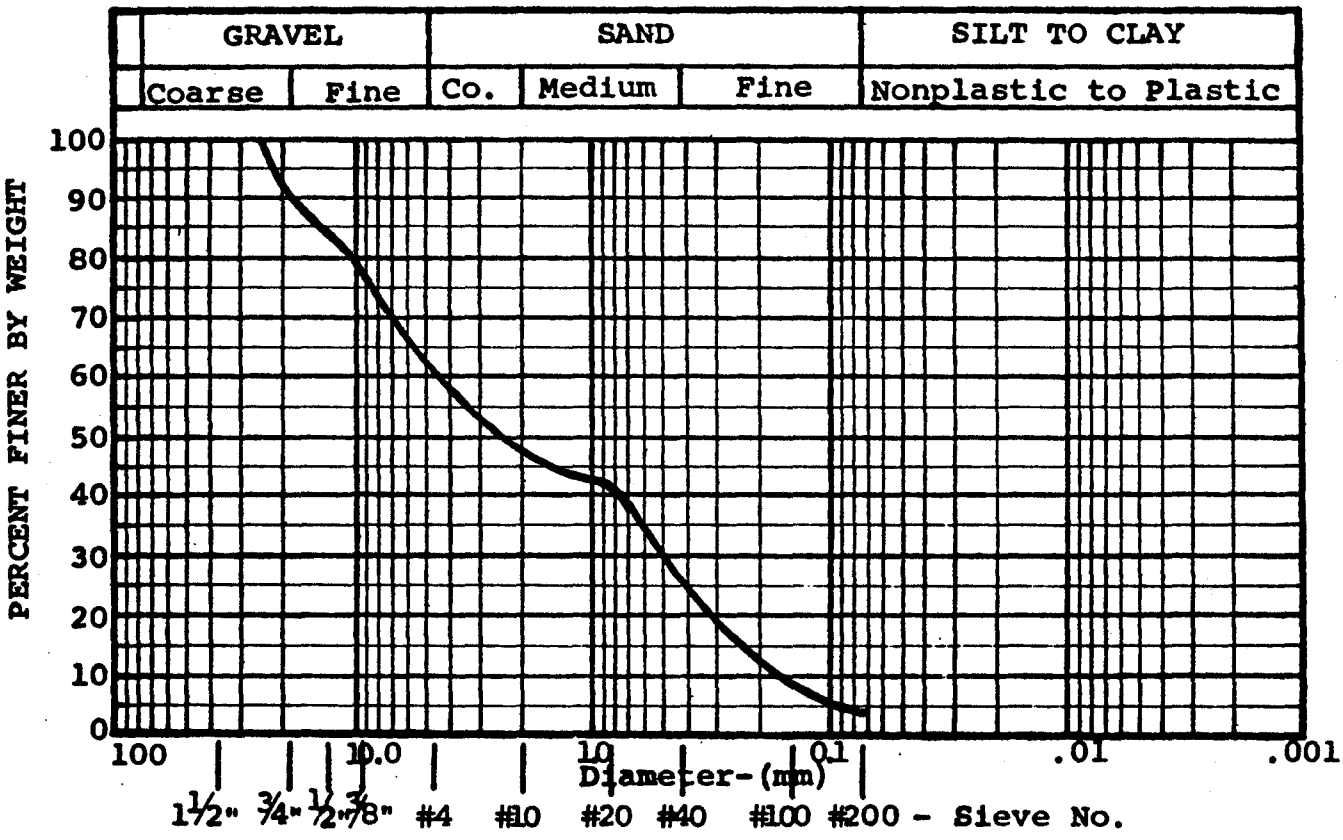
Test No. J 1149

Project HWY 6450, INDEPENDENT AVE.

Date 1-30-80

Sample Location T.H. #4 @ 4'

Test by T.D.H.



Sample No. 3

Specific Gravity

Moisture Content 9.4 %

Effective Size 0.17

Cu 25.3

Cc 0.33

Fineness Modulus

L.L. % P.I. NP %

BEARING 1500 psf

Sieve Size	% Passing
1 1/2"	100
1"	100
3/4"	90.5
1/2"	84.6
3/8"	77.2
4	61.4
10	48.2
20	41.6
40	25.7
100	8.2
200	4.9
0200	

Sulfates 250 ppm

GRAIN SIZE ANALYSIS

LINCOLN-DeVORE TESTING LABORATORY
COLORADO SPRINGS, COLORADO

Soil Sample GP-GM

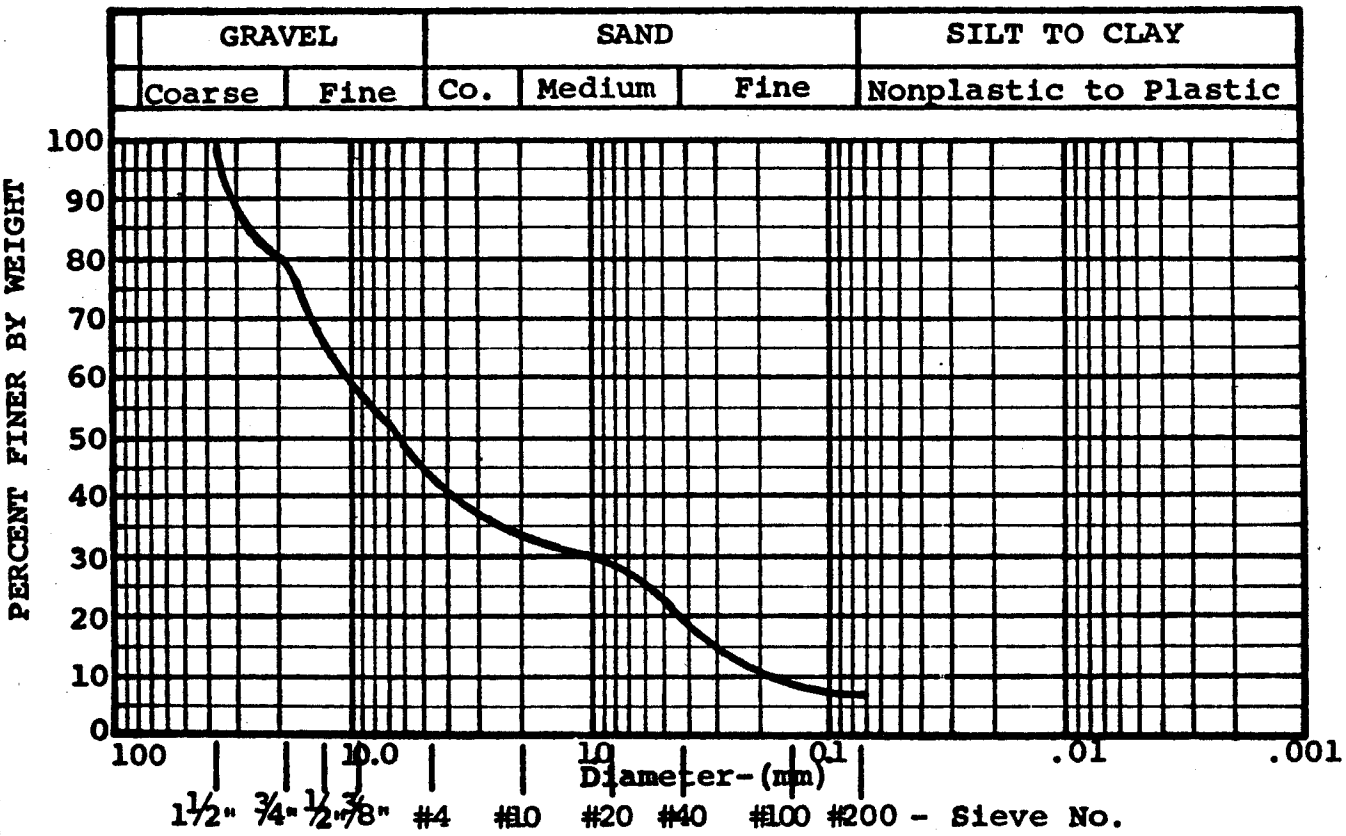
Test No. J-1149

Project HWY 6&50, INDEPENDENT AVE.

Date 1-30-80

Sample Location T.H. # 2 @ 9'

Test by T.D.H.



Sample No. 4

Specific Gravity

Moisture Content 7.3%

Effective Size 0.2

Cu 50.25

Cc 0.60

Fineness Modulus

L.L. % P.I. NP %

BEARING 6000 psf

Sieve Size	% Passing
1 1/2"	100
1"	81.7
3/4"	79.3
1/2"	64.6
3/8"	58.5
4	42.4
10	33.1
20	28.6
40	19.5
100	9.0
200	6.5
0200	

Sulfates 250 ppm

GRAIN SIZE ANALYSIS

LINCOLN-DeVORE TESTING LABORATORY
COLORADO SPRINGS, COLORADO

Lincoln DeVore
1000 West Fillmore St.
Colorado Springs, Colorado 80907
(303) 632-3593
Home Office

February 29, 1980

J & J Enterprises
520 West Gunnison
Grand Junction, Colorado 81501

Re: Hveem-Carmany Testing

Gentlemen:

In accordance with your request, we have completed Hveem-Carmany testing on a sample of material obtained from Triangle Park, Grand Junction, Colorado.

The results are shown below:

R = 15
Average Displacement @ 300 psi = 4.54
Average Expansion Pressure @ 300 psi = 36.0

We hope this has provided you with the information you required. If questions arise, please feel free to contact our laboratory at any time.

Respectfully submitted,

By: Edward M. Morris

EMM/jm
J-1267

STAFF CONFERENCE MEMO

SUBDIVISION SKETCH PLAN

Development Proposal TRIANGLE PARK Conference Date 14MAR80

Conference Attendance: LOWELL LESTER, KARL METZNER

Owner _____ Developer _____ Engineer Cangey & Assoc.

Subdivision Type: Conventional ✓ PD _____ Minor ✓ Existing Zone _____

Parcel No. _____ Common Location independant & U.S. 6&50

Present Use: VAC/AG.

Adjacent Uses: _____
North South East West

SOIL/GEOLOGY/TOPOGRAPHY: Type _____

Reports Requested: Geology ✓ Radiological ✓ Floodway N/A Soils ✓

UTILITY PLAN:

Irrigation Water GRAND Valley
Source / Canal Shares / Amount System

Treated Water UTE Line Size _____ Sewer city

Power: Electricity PSCO Natural Gas PSCO Other _____
kind / source

TRANSPORTATION PLAN (N, S, E, W - VEHICULAR, PEDESTRIAN, BICYCLE, BUS LOADING, TRUCKING)

Roadways: Major Arterial 6&50 Minor Arterial NONE

Collectors Independant (66' ROW) (33' 1/2) Internal NONE

Curb Cuts N/A

Connectors _____

Existing Perimeter Intersections (Internal / External) Independant & 6&50

Improvements Standards: Internal N/A

Perimeter _____

Proposed Public Site N/A Payment to Public Site Fund ?
CITY - NONE
COUNTY - 5%

Proposed Private Common Open Space N/A

County/City Policies Applying to this Proposed Project:

Small-Cooley ✓
Airport N/A
Flood N/A
Agricultural N/A
Mineral Resource N/A
Other _____

SPECIAL COMMENTS: Poss. lift required for sewer.
If done in the county will require a Power of Attorney for annexation. Check with State Hwy dept. about access. MAY be screening reqmt against Westlake Park.

Developer Signature Signature 14MAR80 Date

City of Grand Junction, Colorado 81501
250 North Fifth St., 303 243-2633

March 24, 1980

J & J Enterprises
Mr. Ray Davis
520 W Gunnison Ave.
Grand Junction, CO 81501

Gentlemen:

Re: Triangle Park (SE Corner of Independent Ave. & U.S. 50)

The following items outline the position of the City of Grand Junction in regard to providing water and sewer services to the above referenced property.

Water

A. If the Ute Water District will agree to allow the City to serve this property in the Ute District, the City will construct or allow the developer to construct to City specifications a water main in Independent Ave. to provide both domestic water and fire protection. If the City constructs the line the developer can purchase the appropriate taps. If the developer constructs the line then services will be provided for cost of time and material only.

B. If the Ute District will not allow the City to serve this property with domestic water, then the developer may construct to City specifications a line and fire hydrant(s) to provide fire protection. The City will accept the lines and maintain them as part of the City System.

Sewer

A. Prior to the City building a sewer main in Independent Ave. the developer may construct a private sewer system (including pumps as necessary) to deliver sewage to the City system at 25½ Road and Independent Ave. The developer will operate and maintain the system. Plant investment fees will be required for each building sewer.

B. After the City constructs a sewer in Independent Ave. (estimated for 1982) then the developer at his option may abandon the private system and purchase taps for each building sewer for a tap fee less the plant investment fees previously paid.

Yours truly,

James E. Patterson Jr.

James E. Patterson, Jr.
Utilities Director

JEP/hm
Lowell Lester
cc - Ron Rish

COLORADO STATE DEPARTMENT OF HIGHWAYS

DIVISION OF HIGHWAYS

April 16, 1980

Re: Frontage Road
Extension, Job #1956.002

J. & J. Enterprises, Inc.
520 West Gunnison Avenue
Grand Junction, CO 81501

Dear Sirs:

In reply to a letter written by Mr. Lowell Lester dated April 10, 1980 in regards to the frontage road along Interstate 70-B West of Grand Junction.

As previously stated, we will allow the existing frontage road to be extended East to your property line, but we will not allow any additional access to the thru lanes of highway Interstate I-70B.

Any construction work done on the frontage road will be done to highway specifications. These can be obtained from Mr. Willis Spanicek, District Headquarters, 606 South 9th, Grand Junction.

We will accept your second proposal and if constructed, it will be done at your expense.

Thank you for your cooperation in this matter.

Sincerely,

Emery E. Bradbury
Highway Maintenance Superintendent

Douglas C. Walck
Roadside Adv. Inspector

cc: Bradbury
Gierhart
Spanicek
file

P.O. Box 2107 GRAND JUNCTION, CO 81502 (303) 242-2862

Gingery Associates, Inc.
CONSULTING ENGINEERS
1310 UTE AVENUE
GRAND JUNCTION,
COLORADO 81501
TELEPHONE 303 245-0627

PRINCIPALS
DERYL W. GINGERY
LARRY A. MULLER
FLOYD E. MONTGOMERY
JOHN W. CASKEY
DOUGLAS C. STOVALL

HOME OFFICE
2840 SOUTH VALLEJO STREET
ENGLEWOOD, COLORADO 80110
TELEPHONE 303 761-4860

May 6, 1980

See fire hydrant plan attached.

Fire Marshall
City of Grand Junction
330 South Sixth
Grand Junction, CO 81501

Attn: Wes Painter

Re: Fire Protection for Independent Avenue Commercial Park
Job No. 1956.502

Dear Wes,

This letter is to confirm the agreement that we made over the telephone on April 29, 1980 regarding the fire protection for Independent Avenue Commercial Park.

On the "Review Sheet Summary" file No. 26-80, you recommended a system that included seven fire hydrants, three of which were placed on an 8 inch looped line. In our conversation, I described a system of six fire hydrants, four of which were placed on an 8 inch looped line, that I feel is at least equal to your recommendation. The attached sketch shows the system I proposed.

If you have any questions regarding this, please call me.

Very truly yours,
Gingery Associates, Inc

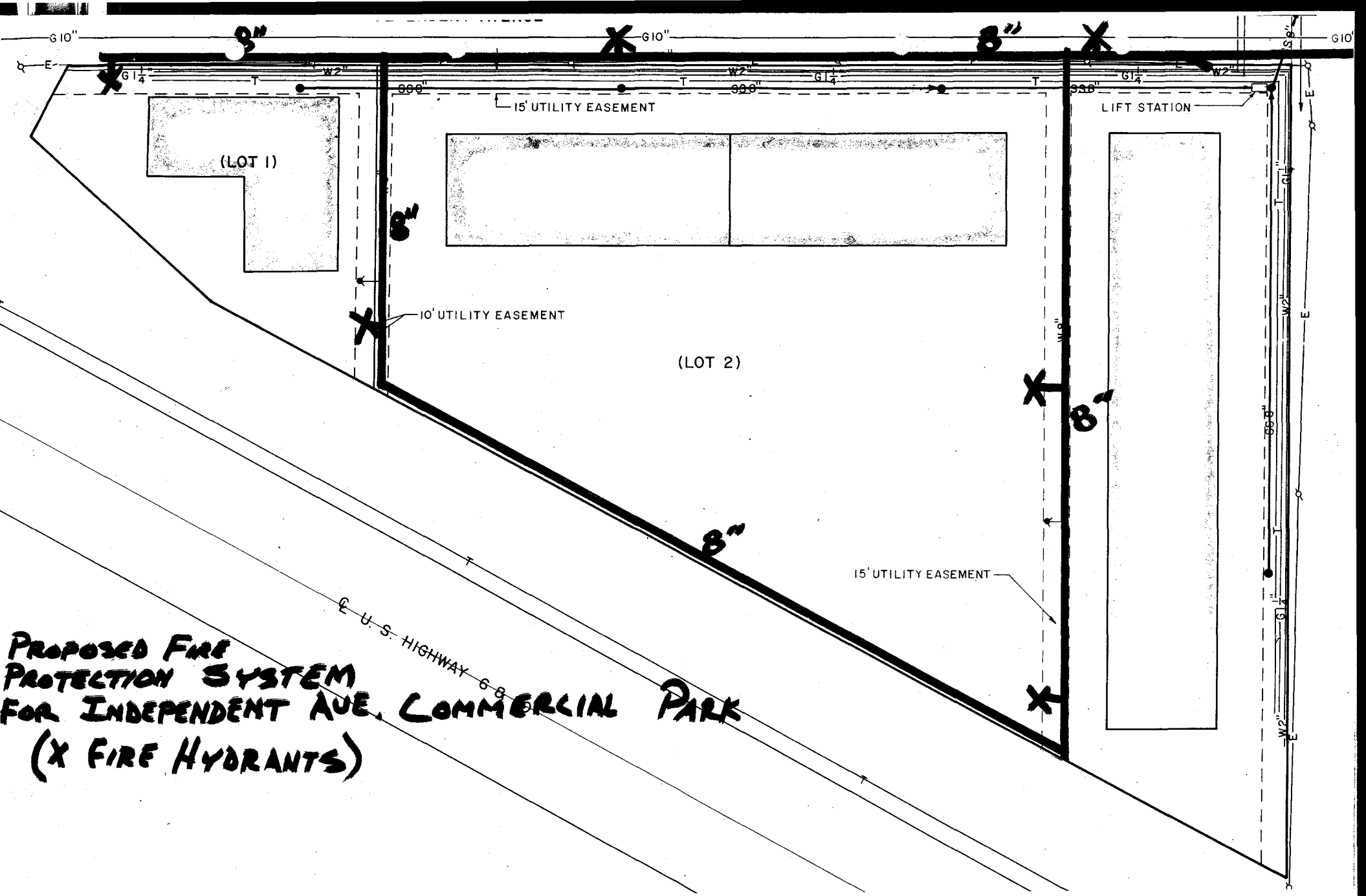
Lowell D Lester

Lowell D. Lester

LDL/dd

Enclosure

cc: Mr. Ray Davis, J & J Enterprises
Mr. Karl Metzner, City-County Development Department


G10"
8"
G10"
8"
G10"
E
G1¼"
T
W2"
15' UTILITY EASEMENT
LIFT STATION
(LOT 1)
8"
10' UTILITY EASEMENT
(LOT 2)
8"
8"
15' UTILITY EASEMENT
℄ U.S. HIGHWAY 68
PROPOSED FIRE PROTECTION SYSTEM FOR INDEPENDENT AVE. COMMERCIAL PARK
(X FIRE HYDRANTS)